

RELEASE NOTES - RPG BUILD 5.0

This page contains the enhancement and change information occurring with RPG Build 5.0 software. The release of RPG Build 5.0 is projected for Spring 2004. The remainder of the document contains minor problems along with workarounds, solutions, explanations of how some functionality works, and suggestions on how to prevent various problems and situations.

Enhancements and Change Information in RPG Build 5.0

RPG Software Build 5.0 provides the following enhancements:

- Adds the Mesocyclone Detection Algorithm (MDA) and MDA product. The MDA product is similar to the MESO product, but will improve the mesocyclone detection accuracy.
- Adds two new Volume Coverage Patterns (VCPs): VCP 12 and VCP 121.
 - VCP 12 has a 4.1 minute duration and improved vertical resolution at low angles.
 - VCP 121 is used with the Multiple Pulse Repetition Frequency Dealiasing Algorithm (MPDA). MPDA combines velocity data from up to three Doppler sweeps (at the same elevation angle) with differing Pulse Repetition Frequencies (PRFs) to mitigate range and velocity aliasing problems.
- Replaces the existing Precipitation Preprocessing Algorithm with the Enhanced Preprocessing Algorithm (EPRE). The EPRE upgrades the Precipitation Processing Subsystem to handle new VCPs and allows future PPS enhancements.
- Adds new Tornado Detection Algorithm (TDA) Rapid Update (TRU) product. This algorithm updates the TDA each volume scan and generates a new TRU product.
- Adds data compression and LDM software to the Base Data Distribution System (BDDS) to enable the NWS Level II data collection network.
- Changes to support non-associated AWIPS One-time Requests over the AWIPS WAN.
- Changes to support frame relay communication between DOD and FAA RPGs to Distant MSCFs and associated AWIPS.
- Removes RCM editing capability and PUP/RPGOP status messages.
- Automatically saves adaptation data changes.

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1 ADAPTATION DATA AND OTHER PARAMETER SETTINGS

1.1 Editing Problems

Problem: After entering values into an editable field, the process may become corrupted. For example, the operator selects an edit field, makes changes, then selects another edit field and attempts to edit it. However, the keystrokes affect the previous field the operator has already edited and not the edit box currently selected. A workaround is to close the window and start over. However, any edits that were correctly entered will be lost.

Solution: If the problem continues, the operator should use the TAB key to move from box to box. This is slower, but the editing process will not have any problems.

1.2 Paired Products Not Available for Specific Alerts

Problem: The Velocity Alert in the Grid window does not list the Digital Base Velocity product as a selectable paired product.

Problem: The Max 1Hr Precipitation alert in the Volume window does not list the HSR and USP products as selectable paired products.

Solution: This problem is considered to be minor and is not scheduled to be fixed.

1.3 Product Mnemonic Changes in Edit Mode for Load Shed Product Window

Problem: On the "Load Shed Product" window when not in an edit mode, the first column of the table is the product mnemonic (e.g., R or CR). Upon activating edit mode, however, this column is replaced with an ID column. This is different from the "RPG Product Generation Table Editor" window, which adds a new column for this ID when edit mode is activated. That is, this ID becomes column 1 and all other columns are moved over by one (mnemonic becomes column 2, etc.) The behavior of the Load Shed Product window should be consistent with the Product Generation Table window.

Solution: This problem is considered minor and will be fixed in a future software build.

1.4 Difficulty Editing the OHP, THP, and STP Data Levels

Problem: Editing changes to the OHP, THP and STP data levels are cumbersome and are not explained properly. The data levels are bound by the value above and below it. Since the default values are incrementally small (close together), any change to a level could become laborious and involve a change to every data level.

1.5 SRR/SRM May Use Values From Storm Track Algorithm

Problem: The default values for Storm Speed and Direction for the SRR and SRM products are "-1". This may be confusing to the operator, if it is not known that "-1" is a flag that indicates that the SRR and/or SRM algorithm will obtain the values from the Storm Track algorithm.

Workaround: The default values can be displayed with the following steps at the MSCF HCI:

- a. Click on the Products button in the RPG box to open the RPG Products window.
- b. Click the Generation List button. The RPG Product Generation Table Editor window opens.
- c. SRR and SRM are products 55 and 56. The user can see the default values by single clicking on the blue box on either the 55th or 56th line.

1.6 Negative Numbers Not Valid Entries For USP Product On RPG Product Generation Table

Problem: The values for the end hour of the USP product on the RPG Product Generation Table should be 0 to 23. The "-1" is not a valid value for the GUI. The "-1" is only valid for the product request that an external user makes. Any negative entry is invalid.

Workaround: Do not enter a negative number for the USP end hour value in the RPG Product Generation Table. This problem will be fixed in a future software build.

1.7 Radar Height Mismatch

Problem: In the Edit Selectable Product Parameters window, the RPG shows a minimum Radar height of 2000 ft. as the lowest acceptable height. However, the AWIPS display of the VAD product indicates a lowest height of 1000 feet. The VWP product has a similar problem.

Workaround: If a site updated their VAD and RCM height adaptation data per pre-Build 10 instructions, then they won't have the problem identified in this issue. If they did not, then they will need to do the following:

- a. At the MSCF HCI, click on "RPG Products"
- b. Click on "Selectable Parameters"
- c. Unlock the LOCA password at the URC level
- d. Click on "VAD and RCM Heights"

- e. Click on the lowest level which currently has check marks in the VAD and RCM columns (i.e., click on one of the check marks). The check marks should change to tan-colored squares.
- f. Reselect the VAD and RCM for the same height by clicking on both squares.
- g. Click **Save**.
- h. Click **Yes**.

1.8 Meso and TVS Values Can't Be Edited In Alert Threshold Editor.

Problem: The operator is not able to change any of the values for Mesocyclone and TVS (3 for Meso and 2 for TVS) in the Volume and Forecast windows of the Alert Threshold Editor. These values should not be highlighted in blue.

Solution: This problem is considered to be minor and will be fixed in future build.

1.9 FAA Inactive Channel Adaptation Data May Not Be Updated

Problem: During a test, the operator removed an entry from the list of dial users on the Channel 2 PDCS screen. The operator then restored the baseline adaptation data on the Active Channel (2) by selecting Restore. The System Status on Channel 1 indicated that the adaptation data had been updated with the same time stamp as Channel 2 adaptation data update. The Match icon on both channels was green. However, the Channel 1 PDCS screen still listed the dial user that the operator had removed on Channel 2. A similar modification was made to an Alert Threshold on Channel 2. The change automatically updated on Channel 1. The indicators were the same; i.e., Match was green on both and the system status log had the same time. However, when the Restore button was selected on Channel 2, the Alert Threshold changed on Channel 2 but not on Channel 1. Subsequent attempts to modify the Alert Threshold on Channel 1 by editing and Saving the Channel 2 threshold value were unsuccessful. The Match icons remained green through all edits, Saves and Restores.

Workaround: After editing and saving adaptation data on the controlling channel or restoring adaptation data on the controlling channel, the operator should execute a Restart All Tasks on the non-controlling channel.

2 ENVIRONMENTAL WIND ISSUES

2.1 Environmental Winds Data Entry Ignored

Problem: On the Environmental Data Entry screen, the site entered the PPBB data from a sounding and hit <Enter>, just as the EPSS instructs. However, the data is not used to update the winds table.

Workaround: You must enter an "=" sign as the last character of the PPBB data before hitting <Enter>.

2.2 Do Not Use Wind Barb to Set Default Storm Motion in Environmental Data Window

Problem: To make changes to the Default Storm Motion values using the wind barb in the Environmental Data Window, one must click on the wind barb and drag the barb about the center point to a new direction. A pencil icon appears along the stem of the barb as it is dragged. As the barb is pulled to a new direction, the operator tends to move to the far end of the barb stem to make fine adjustments to the direction. As this is done, it also changes the wind speed. The speed adjustment varies from the minimum to maximum depending on your relative distance from the barb center point (minimum at center, maximum at the far end of barb). If the operator fails to confirm the wind speed after modifying the direction, they can easily end up with the right direction but an erroneous wind speed.

Workaround: The recommendation is to NOT use the wind barb to set your default storm motion. Instead, select "Data Entry" and enter the default Direction and Speed in the data fields.

2.3 Misleading Warning Popup While Editing Environmental Data

Problem: Within the Data Entry window of the Environmental Winds, current setting for -20 degree C level was 23.5 thousand feet. Within the edit block, highlighted the .5 (tenth value), and deleted it to read just 23. Selected the return key. This figure was not accepted and a warning popup appeared that stated: "23. is not a valid real, it contains more than 6 significant digits."

Workaround: In order to set the height at 23,000 feet, the operator has to put in 23.0 and then the figure will be accepted. The present warning popup is misleading as the operator never put in more than 6 significant digits. If the operator deletes the entire existing entry and enters **23<Return>**, then the value is accepted as "23.0" But if the operator edits just the tenth value, then the problem occurs. This problem also exists for the 0-degree C edit block entry.

Solution: This problem is considered to be a minor problem and may be fixed in a future software build.

3 CLUTTER SUPPRESSION

3.1 Save Your Clutter Regions Before Hitting Download Button

Problem: After an existing Clutter Regions file is edited and then downloaded, the edits are automatically saved in the existing file, whether you want them saved.

Solution: To avoid this problem, it is recommended that BEFORE selecting the Download button, the Operator ALWAYS select File, then Save As. The operator can then enter the name of the file where they want the edited clutter regions saved. If the edit is temporary, "Temp" can be used as the filename. Then when the operator is ready to quit using the file, the "Temp" filename can be deleted.

3.2 Saving Clutter Regions for Day to Day Use

Problem: After an operator has created one or more clutter region files (using the steps File, Save As, "xxx," Accept) to be used on a routine basis (inversion, time of year, etc.), the next step is to save the newly defined clutter region files to the baseline.

Solution: To do this, select the Update button. This action will update the baseline with the files that have just been created. After updating the baseline, select the Restore button to restore the files to the filename list. If files are created but Update is not selected, the new files will disappear when/if someone selects Restore. The filename list displays only those files on the Restore list that were last selected to be Updated. Also, the name of the current Clutter Region you are working with is displayed at the top of the Clutter Regions window.

Additional Notes:

- a. It is highly recommended that operators perform a save_adapt_floppy after updating the baseline files.
- b. The software allows a site to define and save up to 19 Clutter Region files. The "Default" file, which can neither be changed nor deleted, makes 20 total files. This should not be confused with the maximum number of regions per file, which is the same as the legacy RPG (15 total regions per file).
- c. A Clutter Region file name can be up to 31 characters long.

3.3 Clutter Bypass Map Editor Does Not Have a "Reset Zoom" Button

Problem: The Clutter Bypass Map Editor does not have a "Reset Zoom" button. When the operator zooms out (by depressing the right button), the display is centered on the cursor location. The only way to get back to the center of the Clutter Bypass Map is to search around and continue to select zoom out until the center of the map coincides with the center of the display. Also, when exercising the Zoom feature, the operator can inadvertently

recenter the cursor location well past 275nm from the radar. (Testing showed this could be done as far as 757nm from the radar.)

Solution: Bypass Map editing is a seldom used function at the RPG, and it is not recommended. This problem is considered minor and may be fixed in a future software build.

3.4 On the Edit Clutter Regions Window There Is No Legend for The "None" Select Code

Problem: When the operator selects the "None" code for a clutter region from either the Bypass Map or All Bins, the defined clutter region turns black in the Doppler Channel and Surveillance Channel circles in the upper-right portion of the window. However, there is no legend indicating that the black area corresponds to the defined "None" region.

Solution: This is considered to be a minor problem may be fixed in a future software build.

3.5 CFC Regions Don't Exactly Match Clutter Regions

Problem: Operator defined several regions and saved, then downloaded the resulting clutter region's file. When the resulting CFC product became available the operator selected the CFC product as the background for the clutter region's GUI. The defined regions on the CFC product did not match the radial definitions as displayed by the clutter regions GUI. It appears the CFC regions are displaced 1 or 2 degrees counter clockwise of the radial definitions in the GUI. This is another artifact of allowing users to view the CFC product at the RPG. The azimuth angles are defined in degrees yet the values passed to the RDA are defined in units of 360/256 degrees, i.e., the resolution of the notch width map data is approximately 1.4 degrees (see table XII of the RDA/RPG ICD for Message 8).

Solution: None. This is a known problem with the RDA and is a consequence of the resolution of the map data.

3.6 Clutter Regions Backgrounds Don't Always Appear When Requested

There are several minor problems with the new process for selecting Clutter Regions Background Products:

Problem: When the radar is down for more than 10 minutes, the operator may get either an old background product in the Clutter Regions window or the message "Background Product Data Expired." If the "Product Expired" message is received, that product will be generated in the next volume scan but not automatically displayed.

Problem: If the operator selects a Clutter Regions Background Product that is not being generated, a popup will appear stating "Background Product Data Not Available." The product will be generated in the next volume scan but not automatically displayed.

Workaround: Currently the software requires the Clutter Regions window to be refreshed in order to display the newly generated Background Product. So if the operator still has the Clutter Regions window open, this product will not appear in the Clutter Regions window until (1) the window is closed and then reopened, (2) the operator selects another background product and then selects the original background product again, or (3) the operator switches from the current Segment value (High to Low or Low to High) and then back again. This problem may be fixed in a future software build.

Problem: It appears that once a Clutter Regions Background Product begins to be generated, it continues to be generated even if the operator closes the Clutter Regions window or selects a different Clutter Regions Background Product.

Solution: This problem may be fixed in a future software build.

3.7 Clutter File Manager Allows Edits to Be Saved While Screen Is Locked

Problem: In a locked editor, created 19 new files, then:

- Edited one of the 19 new files
- Clicked "Download"
- Got the warning popup about needing to save edits - selected "Yes"
- File was apparently saved

Essentially, this means the operator could "Save" edits to an existing file in a locked editor (as opposed to having to use the "Save As" button - as is normally the case).

Solution: This problem will be fixed in a future software build.

3.8 Misleading/Incorrect Clutter Suppression Editor Popup Messages

Problem: There are two misleading/incorrect clutter suppression editor popup messages that occur under the following circumstances: At the file manager, after selecting New then Save, the following warning popup appears: "You are changing clutter files but did not save edits to the previous file. Do you want to save them?" Even when no edits were made. If Yes is selected, Clutter Region Filename popup (Label, Cancel, Accept) appears.

Workaround: Either select "No", when asked if you want to save changes, or select "Cancel" when the Clutter Region Filename popup (Label, Cancel, Accept) appears. This problem may be fixed in a future software build.

3.9 Clutter Regions Zoom Feature May Produce Strip of Data Outside the Display Area

Problem: When using the zoom feature in the Clutter Regions window, a vertical strip of data from the background product can appear between the color scale and the circles for the Doppler Channel and Surveillance Channel. It looks as if the zoomed data is being

displayed in this strip outside of the square the product is displayed in. This problem occurred with several different background products and for both the low and high segments.

Solution: This problem will be fixed in a future software build.

3.10 Clutter File Manager Allows Files With Identical Names

Problem: At the Clutter Region Files window, did the following steps:

- Clicked "New"
- Clicked "Save As"
- Entered "xxyyzz" in Clutter Region Files label field
- Clicked "New"
- Clicked "Save As"
- Clicked "Accept" (left label field blank)

This produced a second file named xxyyzz. Did this several times, until there were numerous files in the file manager with identical names.

Solution: This problem will be fixed in a future software build.

3.11 Clutter Regions Window: Extra-Sensitive Cursor in Zoom Mode

Problem: Click on Clutter Regions, then click on Zoom. Click anywhere in the Background display, and the zoom feature works correctly. Move the cursor to the right of the Background display, click with the same button, and the zoom feature inside the background display continues to work. The zoom feature is area sensitive in the entire area on the right side of the background display all the way to the right-hand edge of the window.

Solution: This is considered to be a minor problem will be fixed in a future software build.

3.12 Do Not Delete Line 1 in the Clutter Regions Windows

Problem: The operator can delete Line 1 in the table at the bottom of the Clutter Regions screen. When this happens, Line 1 disappears and the Notch Width Map (NWM) is invoked. Both circular Bypass Map Displays turn totally purple. However, it is recommended that Line 1 never be deleted because it defines the default clutter map.

Solution: If the operator accidentally deletes Line 1 in the Clutter Regions screen, simply close the Clutter Regions Window without saving, then reopen it and the Region 1 line will reappear.

3.13 Operator Must Keep Track Of The Number Of Exclusion Zones Being Used

Problem: As exclusion zones are created in the Hydromet Preprocessing window (Algorithms Section), the operator must remember the exact number of exclusion zones created and enter that value in the "Number of Exclusion Zones" box. If any zones are added or deleted, the "Number of Exclusion Zones" value must be changed. If the correct value is not entered, the exclusion zones will not be implemented properly.

Solution: This problem will be fixed in a future software build.

4 LAN COMMUNICATIONS

4.1 Loss of LAN Connectivity for Short Period

Problem: With the RPG HCI open and multiple HCI windows open, a window automatically opens and states "A network disconnection occurred" or a similar message. Then the RPG HCI and other HCI windows disappear. The RPG HCI is restored within a few seconds, but the other HCI windows previously open must be manually restarted.

Operational Impact: Operator loses control of the system for a few seconds up to a minute or so (until required windows are restored). Data entered in editable windows, but not saved prior to the network disconnection, is lost.

Solution: None. This is a rare problem and investigation is still ongoing.

4.2 RPG Not Reachable From MSCF

Problem: Logged in at MSCF. MSCF HCI came up. All indicators were green. Selected the RPG HCI button. A popup window appeared saying that RPG was unreachable and a 3 minute timer began counting down. Repeated the selection of RPG HCI button several times with the same result. Operator was able to telnet to RPG and grepped for failed tasks but did not find any. Went to the RPG and found the HCI running without problems. The infrastructure on the RPG was having trouble creating a pipe between the main RSSD process and its children.

Solution: The cause is unknown but believed to be infrequent. Currently there are two ways to clear up this problem and may require System Administrator or Hotline assistance:

- a. On an RPG terminal window,
 1. type "stop"
 2. type "clean"
 3. type "start"
- b. If this does not work, Reboot the RPG machine from the MSCF Power Control Function or by typing "init 6" at an RPG terminal window (you must be a super user to do this last option).

5 MSCF PRINTER

5.1 Can't Print Status Log

Problem: The printer is not working.

Solution: The following steps should be performed:

- a. Make sure the printer is online and not displaying any error codes on its LED.
- b. Check the network connection. On the MSCF command line execute a "ping printer" command. The proper feedback is "printer is alive".
- c. On the MSCF command line, do a "ipstat -t". This should display all the internal system information about the print jobs and queue.
- d. (Optional) Sometimes a print job may clog the print queue. The command "cancel color printer <print_job_id>" will remove the job from the queue.
- e. The user can only print from the MSCF. Printing from RPG will NOT work.

5.2 After Printing Specified Number of Status Messages, "Print ALL Messages" Doesn't Work

Problem: Printing the RPG's status log at the MSCF and used the "Print ALL Messages" option. The number "10" was desensitized in the box where you enter the number of messages you want to print (previously an operator had used the option to print just 10 messages). Although operators had requested Print All Messages, only the top 10 messages were printed.

Workaround: To print all of the messages, the operator has to enter "2000" back into the box.

Solution: This problem will be fixed in a future build.

5.3 MSCF Printer Status Not Reported

Problem: The MSCF Printer status is not reported to the MSCF or RPG HCI. The operator needs this information to know accurate system status.

Solution: This problem is considered minor and will be fixed in a future software build.

6 HCI DISPLAY ISSUES

6.1 Products in Database Window Shows No Products When Products Are Available

Problem: Products in Database window opened - a popup warning says "No Products in Database".

Workaround: Close the Products in Database window, then reopen it. Database contains products now.

6.2 No Log Messages in RPG Status Window

Problem: Open the RPG Status window, but there are no system log messages in the bottom window.

Workaround: Close the RPG Status window and reopen it. A current log of messages appears.

6.3 Transmitter Power and Interference Suppression Status Do Not Update Continuously

Problem: On the RDA Control/Status window the Transmitter Power, Interference Suppression Status, and the Interference Rate do not update during a volume scan as they do on the MMI.

Solution: This is considered normal RDA behavior. The values update at the beginning of each scan or if Auto PRF downloads a new VCP to the RDA.

6.4 Comms List Save Button Not Consistent With Other Screens

Problem: Open the Products selection in the RPG area, then select Generation List. In Precip Mode A or B, open the password-protected fields. Make changes, click Save, click No, and the changes remain on the screen. Next, open the Comms selection in the Users area, open the password-protected fields. Make changes, click Save, click No, and the changes are deleted from the screen and original values restored. The Comms List "Save - No" response should be the same as the response for the Generation List.

Solution: This problem is considered to be minor and may be fixed in a future software build.

6.5 Double Clicking on A Product in Products in Database Window Brings Up Wrong Product

Problem: At the HCI, select Products, select Products in Database from the RPG Products window. When selecting a product, (e.g., RCM 74), by double-clicking on the product

does not bring up the RCM 74 but a different product. In three consecutive attempts, 3 Velocity Products (V26, V27, and V25) appeared in the Products bar. It appears that this problem is unique to the Distant MSCF.

Solution: Operator should click only once to select the product they want.

6.6 Minor Problems Maximizing Some Windows

Problem: When the Clutter Bypass Map Editor window is maximized, it expands horizontally but not vertically. The top and bottom parts of the map are truncated.

Problem: When the Products in Database window is maximized, if you right click on the title bar, a drop down menu opens. Move the cursor and left click so that the drop down menu closes, then clicking on the maximize button does not restore the window to its original size.

Solution: These problems may be fixed in a future build.

6.7 Multiple Problems With Font Size Changes

Problem: Open up the HCI Properties Font window. Change both size and font to 90. Changes are made and the Apply button becomes sensitized each time the enter button is used. Change the values back to 100. The values are accepted, but the apply button does not become sensitized and the size on the window itself remains in the smaller size. Close the window, then open it up again. Attempt to use the default values, but the window does not regain its size and the Apply button remains grayed-out and desensitized.

Workaround: Shut down the HCI and then bring it back up from the MSCF HCI button for the font properties window to resume its size font.

Problem: Open up HCI Properties window. Open up Font Properties window. Enter in 99 as Size value. Click on Apply button. Watch how the Font Properties window enlarges to size 99. Click on Default - 100 values are automatically entered. The Font Properties window shrinks to a much smaller size.

Problem: The allowable range for the Font size is 80 to 100. Enter in any value from 80 up to and including 99, and the Apply button becomes sensitized. Enter in the max value (also the baseline value) of 100, and the Apply button remains grayed out and desensitized.

The operator MUST click on the Default button to make the 100 appear and have the Apply button become sensitized. When making changes, the operator can read the warning popup that states the allowable range is 80 to 100. However, if they enter in the max value of 100 by keystroke, it will not be applied. To compound the problem, once the 100 is manually typed in, it cannot be applied. If the operator clicks on the default key, the 100

remains the selected value, BUT the Apply button remains desensitized. It appears to the operator that they can't get back to the 100 value.

Problem: Open the HCI Properties, Font sizes, and change both the Size and Points from 100/100 to 80/80. Then select Apply and Close. The following windows do not reduce down to 80/ 80 size:

- Console Messages
- RPG Products
- Algorithms (None of them)
- Algorithms Password
- Refl Calib
- RDA Control/Status and Password
- RDA Alarms
- Moments
- Archive II
- Record Base Data/Playback Base Data

Solution: These problems are considered minor and may be fixed in a future software build.

6.8 Sorting Lines With Product Distribution Comms Status (PDCS) Screen

Problem: Open up the PDCS window, select lines 1-9, then click on Sorted by Type. You lose the selection of lines 1-8. It seems logical to an operator that no matter how the lines are sorted, once you highlight a group of lines for whatever reason, they ought to remain highlighted.

Problem: Click on PDCS window, then click on Sort by Status. Lines 17 through 24 appear on the first portion of the Product Distribution Lines, and Lines 9 through 16 appear on the second page. The lines are all DEDIC, Enabled, X25 Proto, Class 1, Status Failed, but the lines are not shown in numerical order, low to high.

Problem: Open the PDCS Window, select Sort by Status, click on 2nd page. Several lines randomly become highlighted as if they were selected by the operator. The pattern and lines vary from one opening to another. It confuses the operator, thinking that the line(s) has been selected for some reason by the computer, when, in fact, it is a random selection and requires the operator to perform a manual deselect to get rid of the black line(s).

Problem: Open the PDCS Window, click on sort by Status, and the Con Pending lines appear first, followed by the Connected lines. Now that there are two pages of lines, the Connected lines may show up on the second page, in which case the operator has to take a second step and click over to the 2nd page to see the Connected lines.

Solution: These four problems are all considered minor and may be fixed in a future software build.

6.9 Base Data Display Window Grid On/Off Button May Show On When Grid Is Off

Problem: Click on Base Data Display, and RPG Base Data Display window opens. Click on the grid, and the grid appears (if not on by default). Click on any product elevation, and if product is available, it appears, and grid is still ON the window. If product is not available, then the comment "Product Not Available" appears but the grid disappears. Yet, in the left-hand column, the grid ON button is still indicating the grid is ON.

Solution: This problem is considered minor and may be fixed in a future software build.

6.10 RPG Control Window Hides With Alternating Clicks

Problem: Click on RPG Control button and the RPG Control window appears. Click on the button a second time and it still remains on top, but is not sensitized. Click on the button a third time and it disappears behind the HCI, and never restores back to the top of the screen.

Solution: This problem is considered minor and may be fixed in a future software build.

6.11 Modify VCP Adaptation Data Window Disappears

Problem: At the HCI (no additional windows opened) make the following selections:

Click "VCP Control"

Click "Adaptation"

Select VCP 11 on "Modified VCP Adaptation Data" window

Select VCP 21

Select VCP 31, and this window and the "VCP Control" window immediately disappears. The above happened twice within five minutes span.

Repeated the above, and the two windows disappeared after the sixth VCP xx selection (order was VCP 11, 21, 31, 32, 300, 11, then window disappeared.)

Solution: This problem is considered minor and may be fixed in a future software build.

6.12 Base Data Display Does Not Show VCP 121 Scans Correctly

Problem: For VCP 121, the scan feature will not operate the same for all elevation cuts.

- a. For elevations 0.5 and 1.5, the scan functions constantly.
- b. For elevations 2.4, 3.4, and 4.3, the MPDA does not de-alias "on-the-fly". The de-aliased output is not available until after the last of the redundant scans is collected. Therefore the base data display waits for the data to become available, and the data will appear all at once, at the end of the particular scan.

- c. At elevation 6.0, the VCP goes from a redundant scan mode to a single scan mode. Thus the 4.3 elevation cut will only be visible for the period between the end of the 4.3 scan and the beginning of the 6.0 scan (roughly a few seconds at most.)
- d. Above elevation 6.0, the scan functions constantly.

Solution: None. This is a minor problem and will not be fixed.

7 RDA CONTROL & STATUS ISSUES

7.1 Calibration Switching Manual to Auto Without being Commanded

Problem: RDA in Standby, calibration selected for Manual, new value selected. RDA placed in Operate, Manual Calibration. RDA then placed in Standby. The calibration automatically switches back to Auto. No commands for Calibration were given. RDA placed back into Operate, Calibration changes back (uncommanded) to Manual. The Calibration should remain in the mode selected by the operator.

Solution: None. This is a known RDA problem.

7.2 Generator Retransfer Function With TPS Installed

Background: The retransfer function (generator to utility) of the Automatic Transfer Switch (ATS) has two modes: automatic and manual. When a TPS is installed, a relay monitors the condition of the TPS. When the TPS goes off-line, it automatically places the ATS retransfer function into manual mode. Likewise, when the TPS is placed back on-line, the ATS is automatically placed back into an automatic retransfer.

Problem: Did power transfer from Utility to Generator. No problem. Attempted power transfer back from Generator to Utility. Commands were accepted, but no immediate response was seen. There was a 10 minute wait or check of the commercial power before it switched back.

Solution: The ROC is suggesting that the sites leave the retransfer switch in the automatic position. Therefore, when the TPS is on-line, there is no need for a site to command a manual retransfer.

If a manual retransfer is commanded, this enables the auto transfer function and a 10 minute sample of commercial power is performed before the contactor switches. If sites want manual retransfer capability, they merely place the retransfer switch to manual. In this situation, as before, the switch will be without delay and will be the only way to turn off the generator.

7.3 Enable Button in Interference Suppression Area May Not Work

Problem: The **Enable** button under the Interference Suppression area of the RDA Control/Status window may not work. Button is sensitized, pressed, and a warning popup appears asking for confirmation "Do you really want to do this?". It appears to take the command but never changes from "Disable".

Solution: This occurs if the site DOES NOT have an Interference Suppression Unit (ISU) installed. If the site does have an ISU, the Enable button will work correctly.

7.4 FAA System Issue: RMS Status Responsiveness

Problem: During research/dry-runs of RMS Interface tests, the RPG port 2 (Applications) link break (disconnection) takes just less than 2 minutes to detect/report. This detection/report should occur within 10 seconds. The same link reconnecting is detected/reported within about 5 seconds and meets the 10-second system status reporting requirement.

Background: Discussed current design with NSSL developer and he explained that the RPG waits for 10 NAKs before reporting the interface disconnection. However, upon receipt of the first ACK, the interface reconnect is reported. Hence the difference between the interface being reported up or down via the RMS box color on the main HCI.

Problem: This problem is considered minor and will be fixed in a future build.

7.5 Alert Threshold and Generation List Windows On FAA Inactive Channel Are Static

Problem: During a test of the FAA Redundant configuration a problem with the RPG Product windows on the inactive channel was discovered. For the test, Channel 2 was Active/Unknown and Channel 1 was Inactive/Unknown; Frame Relay was in use. The Wideband was not connected and showed up as Failed at the RPG.

An Alert Threshold was modified on Channel 2. When Save was selected, the change automatically updated on Channel 1. The Channel 1 Alert Thresholds window was opened and the change verified on the Alert Thresholds window. The indicators on both channels were: Match was green on both and the system status log had the same time stamp for the adaptation data update. The Restore button was selected on Channel 2. The Alert Threshold changed on Channel 2 but not on Channel 1 the Alert Threshold window. Subsequent attempts to modify the Alert Threshold on Channel 1 by editing and Saving the Channel 2 threshold value were unsuccessful. The Match icons remained green through all edits, Saves and Restores. (Note: edits cannot be made on the Inactive channel; only the Active channel can be edited)

An investigation of the problem found that the updates on Active Channel 2 RPG2 were made to Inactive Channel 1 RPG1 but the open Alert Threshold window on RPG1 did not show the updates. Closing the window and reopening it displayed the updated or restored adaptation data on Inactive Channel 1 (workaround). The investigation also showed that:

- a. The RPG Products Adaptation Data windows on the Inactive Channel for Alert/Threshold and Generation List are Static; i.e., updates and restores on the corresponding Active channel window DO NOT automatically update on the Inactive channel window if that window is OPEN.
- b. The RPG Products Adaptation Data windows on the Inactive channel for Load Shed Products, Selectable Parameters, and Algorithms are Dynamic; i.e., updates and restores on the Active channel window DO automatically update on the Inactive channel window if that corresponding window is OPEN.

Workaround: Close the Alert Threshold and/or Generation List windows on the Inactive Channel and reopening them. The windows will then display the updated or restored adaptation data. This problem will be fixed in Build 7.0.

7.6 Auto PRF Status Incorrect When Using VCP 121

Problem: When VCP121 is selected and starts operating, the Auto PRF GUIs continue to show On with a Green button or background. However, the Auto PRF is always Off when VCP 121 is in effect. The incorrect status of Auto PRF appears in both the HCI (RPG Control/Status Window) and the VCP Control Window. When the Auto PRF toggle button is clicked off/on, it appears to operate normally, i.e. turn off and on as commanded.

Solution: This problem is considered minor and will be fixed in a future software build.

8 TIME ISSUES

8.1 MSCF and RPG Clocks

Background: Network Time Protocol (NTP) has been added to the system. For NWS, NTP will keep the MSCF, BDDS, and RPG within a second of the master AWIPS time. For FAA or DOD, NTP will keep the BDDS and RPG within a second of the MSCF master time. The date/time will be manually set on the initial installation of the system.

Problem: The System Administrator needs to make sure that all the systems start within 1000 seconds of the master clock. The automated NTP process will not attempt to synchronize clocks outside of plus or minus 1000 seconds. When a system is outside of the 1000 second rule the console will display messages similar to: "Dec 30 2:44:52 xntpd: time error -10306.13 is too large (set clock manually)".

Solution: It will be the responsibility of the System Administrator or Site Technician to manually set the system time/date described in the EHB 6-525 manual Table 4-76.

9 BDDS ISSUES

9.1 BDDS HCI Causes RPG Alarm - WB User Failure

Problem: Open up MSCF Window. Click on BDDS HCI window - twice. Two BDDS windows open up, "bdds_monitor: RPG ALARM ACTIVATED: Wideband User Failure" appears on RPG Status log. The RPG container on the HCI turns to red. The BDDS windows appear slow to fill with data. The RPG alarm clears itself approximately 40 seconds later. The HCI shows no break in the wideband flow of data. The AWIPS connected show no break in the NEXRAD status display. The RPG container on the HCI returns to green.

Solution: This is considered a minor problem that can be prevented by having only one BDDS window open at a time. However, the problem is scheduled to be fixed in a future build.

10 MISCELLANEOUS ISSUES

10.1 USP Database May Not Reinitialize

Problem: The USP reinitialization logic is used whenever the time difference is greater than 30 hours and the database needs to be reinitialized. In the RPG this may not always work correctly when the time difference is greater than 30 hours and it is the top of the hour. This problem will occur only after an RPG outage of at least 30 hours and will only be a problem for up to 59 minutes (the USP database is corrected at the top of the first hour after the RPG is restored to operation.)

Solution: This is considered a minor problem and has not been reported by any field site. The problem may get fixed in a future build.

10.2 Base Reflectivity Product Shows Anomalous Ring of Data

Problem: During a playback of Level II Archive data from test case May 11, 1992, base reflectivity at 9.9 degrees elevation at 19:28Z showed a ring of reflectivity about 3 NM thick at a range of about 65 NM from the radar. The ring showed up in both the 8 and 16 level products at 2.2 NM resolution. It did not show up in the corresponding 1.1 NM resolution product nor was it observed in the base data displayed at the HCI.

Background: After analyzing this problem, it is determined to be a bug in the base reflectivity task which apparently has always been there. When doing the data compaction for 1.1 and 2.2 NM resolution products (from 0.54 NM resolution base data), the end of the data for that radial and elevation is effectively ignored. If the radial buffer contains garbage beyond the end of data for a particular radial at a particular elevation, the garbage data is compacted and therefore can become part of the product. It is still a problem with a legacy algorithm since the algorithm should not be processing data within the radial beyond the range of the 70 kft ceilings. All product data beyond this range should be considered below threshold. After running the same Archive II data through the legacy RPG, the circle appeared but was different with regard to multiple dBZ levels stair-stepped starting below threshold (ND) to 30dBZ then reversing back to below threshold. The pattern appeared to repeat every 28-30 degrees between a radius of 57-59nm sweeping the entire 360 degrees of the radar center.

Solution: This is considered a significant, but rarely encountered, problem. This problem has apparently been in the legacy software since the beginning. The occurrence of the "crop circle" appears to be limited to only the 9.9 degree reflectivity at 2.2nm resolution for both 8 and 16 data levels and has no effect on volume products such as CR, LRM, and LRA. It also appears to be rare when it occurs. This product is rarely used in operations since most 2.2nm resolution base products are used at lower elevations to see "distant" storms. Due to the 70,000' data limitation imposed by the 88D, the more widely used base products for these upper elevations are of 0.54nm resolution.

10.3 Applications-Only Load May Affect Performance of TCP Lines

Problem: To correct an Archive III and mrpg problem, we decided to do an Applications-Only Load. It did correct the Archive III and mrpg problem. However, later we found that the TCP lines were all staying in a Disconnect state. The system status log was showing a Connect Pending on all 16 lines every 30 seconds. This was filling up the System Status Log very quickly. If we disconnected all of the lines from the PDCS, no additional Connect Pending messages were noted.

Workaround: Completing a full software load corrected the problem

10.4 FAA and DOD System Issue: PRF Selection Window Background Is Now Eight Level Product for Distant MSCF

Background: At the Distant MSCF the background display for the PRF Selection window has been changed to an eight-level product.

Solution: This was done to reduce the time it takes to transmit the product from the RPG to the MSCF.

10.5 Units Wrong For Two OHP Alphanumeric Values

Problem: The units for REFLECT-TO-PRECIP RATE CONVERSION MULTIPLICATIVE (and POWER) COEFFICIENTs are shown as DBZ, when none should be present. No units are shown for MIN (and MAX) DBZ FOR CONVERTING TO PRECIP RATE (VIA TABLE LOOKUP), which should both be DBZ.

Solution: This problem will be fixed in Build 6.0

10.6 Exclusion Zone Text Can Be Misleading

Problem: In the Hydromet Preprocessing Algorithm window, entry #5 for Each Exclusion Zone reads: "Elevation Angle #". The text should read "Max Elevation Angle #". This would eliminate confusion with the operator thinking just a specific angle could be entered. Changing the text by adding "Max" would assist in clarifying exactly how the exclusion zone would be defined.

Solution: This problem will be fixed in Build 6.0

10.7 Operators Cannot Change/Download Values For VCPs That Use MPDA

Background: Users are not allowed to change/download VCP changes when executing MPDA VCPs. The interface has been changed to disallow saves and/or downloads.

Solution: None. Information only.

10.8 Delete Button In PDCS/Dial Users Window Should Not Be Used

Problem: During Build 5.0 Operations Testing a problem was found with deleting dial-in users on the PDCS screen. Further investigation has identified deleting a single dial-in user is a serious problem. This is not a new problem. It has been in the system since Build 1.0.

The ROC tester deleted a single dial-in user, then performed an RPG restart. This procedure caused an initialization task to abort which, in turn, caused mrpg to terminate. This behavior affects all configurations. When this condition is induced in the system, the RPG load cannot be started/restarted until specific linear buffers are manually moved/cleared. This process must be accomplished at a RPG command line and can not be accomplished using the HCI.

Solution: For Build 5.0 - the operator SHOULD NOT delete a dial-in user on the PDCS screen. For Build 6.0 - The Delete button for dial-in users in the PDCS window will be desensitized. In Build 7.0 the communications adaptation data will be redesigned and this problem will be corrected.

10.9 EPRE Effects on Precipitation Product Appearance

Problem: Due to the EPRE's techniques for removing residual clutter and AP, there are features of the precipitation products that may occur more frequently than with the legacy algorithm.

- a. AP and Residual Clutter from Terrain: Results from case studies with the EPRE have shown that in widespread AP events, some of the AP is not successfully removed, and will show up on the precipitation products. For example, in the One Hour Precipitation (OHP) product, if most of the AP is not successfully identified by the REC, and thus not removed by the EPRE, a ring structure may appear in the product close to the RDA. This is a result of the exclusion of lower elevations at close ranges. For sites that have mountainous terrain, residual clutter is a typical problem. Careful adjustment of the RAINA parameter and/or exclusion zones may be needed to avoid contamination of precipitation products.

As with AP, residual clutter may not be successfully identified by the REC and thus not removed by the EPRE. This residual clutter will likely appear in locations associated with mountain ranges and also may result in accumulations in the Storm Total Precipitation (STP) product.

b. Ring Structure Near the RDA: To mitigate residual clutter and potentially high accumulations close to the RDA, some of the lower elevations are excluded at close ranges. Specifically:

- From 0 to 5 nm, all elevations at or below 1.6 are excluded.
- From 5 to 9 nm, all elevations at or below 1.0 are excluded.
- From 9 to 25 nm, all elevations at or below 0.6 are excluded.

The angles excluded will depend on the VCP. For example, from 0 to 5 nm, the elevations 0.5 and 1.5 would be excluded for VCPs 11, 21, 121, 31 and 32. For VCP 12, the elevations excluded would be 0.5, 0.9 and 1.3. The result is an occasional ring structure close to the RDA on the precipitation products.

Solution: These problems will be addressed in Build 7.0.